

## REMARKS/ARGUMENTS

The Office action dated October 7, 2010 has been received and carefully considered. By this amendment, the claims remained unchanged, and no claims were canceled. No new claims were added. After entry of this Amendment, claims 1, and 3-34 will be pending, with claims 10-17 and 34 being withdrawn. In view of the following remarks, Applicants respectfully request reconsideration.

### 35 USC §112, 1<sup>st</sup> paragraph

The Office rejected **claim 26** under 35 USC §112, 1st paragraph, as being not enabled for lack of experimental data to support the increase of the total acid number by addition of beta naphthenic acids to thereby reduce corrosivity. The applicant respectfully disagrees.

First, it is pointed out that the Examiner must have a reasonable basis to challenge the adequacy of the written description. MPEP 2163(III)(A). The Examiner has the initial burden of presenting by a preponderance of evidence why a person skilled in the art would not recognize in an applicant's disclosure a description of the invention defined by the claims. *Wertheim*, 541 F.2d at 263, 191 USPQ at 97.

Second, it is noted that the test for enablement is whether one of ordinary skill would need to engage in undue experimentation to practice the claimed invention. MPEP 2164.01. in this regard, applicant notes that no analysis of all of the Wands factors was provided MPEP 2164.01(a). *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988).

More particularly, it is noted that the test of enablement is whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. A patent need not teach, and preferably omits, what is well known in the art. MPEP 2164.01 *In re Buchner*, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991).

Third, MPEP 2164.02 explicitly provides that an applicant need not have actually reduced the invention to practice prior to filing. *In Gould v. Quigg*, 822 F.2d 1074, 1078, 3 USPQ 2d 1302, 1304 (Fed. Cir. 1987). Indeed, the Court held in that case that "The mere fact that something has not previously been done clearly is not, in itself, a sufficient basis for

rejecting all applications purporting to disclose how to do it." 822 F.2d at 1078, 3 USPQ2d at 1304 (quoting *In re Chilowsky*, 229 F.2d 457, 461, 108 USPQ 321, 325 (CCPA 1956)). Once again, the specification need not contain an example if the invention is otherwise disclosed in such manner that one skilled in the art will be able to practice it without an undue amount of experimentation. *In re Borkowski*, 422 F.2d 904, 908, 164 USPQ 642, 645 (CCPA 1970).

## **35 USC §102/35 USC §102**

The Office maintained the prior rejection of **claims 1-9** as being anticipated by, or in the alternative obvious over Petersen (U.S. Pat. No. 5,182,013).

(1) In the office's reasoning for the rejections, the examiner stated "...It is noted that "alpha" and "beta" have been interpreted to mean two different fractions of differing naphthenic acid content. Examiner notes that, "Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim..."

The applicant agrees with the office to the extent that the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004) (The USPTO uses a different standard for construing claims than that used by district courts; during examination the USPTO must give claims their broadest reasonable interpretation.). However, it is also noted that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

In the instant matter, applicant has provided a clear definition of the terms alpha fraction and beta fraction of total naphthenic acids as can be taken from the specification on page 7, lines 3-27. Therefore, the office improperly interpreted the claim terms in a manner inconsistent with the express definition in the specification.

(2) The examiner further argued that "...It is expected that the Petersen process would result in the same composition as claimed..." In light of the above arguments, it should be

readily apparent that such argument is ill supported. Peterson teaches in the passage cited by the examiner (column 1, lines 25-26) dilution of a high naphthenic acid content oil with a low naphthenic acid content oil to so reduce NAP acid corrosivity. However, Peterson fails to recognize or even address any alpha fraction and/or beta fraction of total naphthenic acids in the oils.

In view of the lack of teaching of alpha/beta fractions in Peterson, and in further view of the examiner's statement that the Petersen process would result in the same composition as claimed, it appears as though the office intended to rely on a theory of inherency. However, in such case, the office must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied prior art. See *In re Robertson*, 169 F.3d 743, 745, 49USPQ2d 1949, 1950-51 (Fed. Cir. 1999). The examiner has not provided persuasive support for an inherency theory. Inherency cannot be established based on conjecture and/or probabilities or possibilities. See *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ, Appeal No. 2004-0896 Application No. 09/751,774 Page 6323, 326 (CCPA 1981); *Ex parte Skinner*, 2 USPQ2d 1788, 1788-1789(Bd. Pat. App. & Int. 1986).

(3) Regarding the examiner's argument in the rejection of claim 3 that "...it would have been obvious to the person having ordinary skill in the art to have used the Petersen method to blend a higher naphthenic acid content crude with a total acid number such as 2.0, with a lower naphthenic acid content crude with a total acid number of 0.3, for the benefit of reducing the naphthenic acid corrosivity of the higher naphthenic acid content crude...", applicant points out that claim 3 requires that the first refinery feedstock comprises a refinery feedstock crude with a total acid number of at least 0.3, that the second refinery feedstock comprises a refinery crude having a total acid number of at least 2.0, and that the beta fraction of total naphthenic acids in the second refinery feedstock is effective to reduce naphthenic acid corrosivity of the first refinery feedstock. Thus, the higher TAN feedstock is used to reduce the corrosivity of the lower TAN feedstock. This is contrary to the expectation in the art and clearly taught against by Petersen.

(4) Regarding the examiner's argument in the rejection of claim 7 that "...the person having ordinary skill in the art would readily recognize that the resulting Petersen process would

be able to produce a composition with a total acid number of at least 2.5...", the examiner failed to provide any rationale as to why the person of ordinary skill in the art would have followed Petersen in the claimed manner. Indeed, the person of ordinary skill in the art would have been motivated NOT to produce a composition having a TAN of at least 2.5 as feedstocks with such TAN number are considered significantly corrosive (typically, feedstocks with TAN>0.5 are considered corrosive). Thus, the office failed to provide a motivation and expectation of success for the alleged modification of Petersen.

(5) Regarding the rejection of claim 8, the examiner argued that "...the Petersen process does reduce the naphthenic acid content. Additionally, it is well known that naphthenic acids generally have molecular weights between 200-700...and [that] Examiner holds that the Petersen process, would result in the same product as in claims 1-3, 5 and 7-9..." Once more, it is improper to ignore express definitions of claim terms as pointed out in (1) above. Moreover, the examiner also failed to provide a basis in fact and/or technical reasoning to reasonably support the determination that Petersen process, would result in the same product as noted above in (2) above. Still further, it should be appreciated that the person of ordinary skill in the art would have been motivated NOT to produce a composition having at least 5 mol% naphthenic acids as high naphthenic acid content (absent consideration of alpha/beta fractions) is associated in the art with corrosivity. Thus, the office also failed provide a motivation and expectation of success for the alleged modification of Petersen as already noted in (4) above.

(6) Regarding the examiner's note to applicant that "...[T]he PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his [or her] claimed product....", applicant points out that the teachings of the cited art, and even established prior art test protocols are based on the oversimplified model of direct correlation of TAN with corrosivity. Such teaching is contrary to the alleged necessary or inherent presence of characteristics of the claimed product in the prior art products.

(7) Regarding the rejection of claims 4 and 6, the examiner noted that claims 1 and 5 would teach the limitations and that "...If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process...". Once more, it is pointed out that the

examiner's position of inherency is improper as noted in (2) above. Moreover, it is well known that thermal hydroprocessed crude is not the same or obvious over unprocessed crude. Should the examiner maintain such position, official notice to that effect is respectfully requested.

For at least the above reasons, it is applicant's position that the claims are not anticipated by and/or obvious over Peterson and that the rejection of claims 1-9 should be withdrawn.

### **35 USC §102**

The Office maintained the prior rejection of **claims 18-21, 26-27, 29, and 32-33** as being anticipated by Petersen. The applicant once again respectfully disagrees.

(1) The examiner pointed out on page 7 of the office action that "...It is noted that "alpha" and "beta" have been interpreted to mean two different fractions of differing naphthenic acid content. Examiner notes that, "Though understanding the claim language may be aided by explanations contained in the written description, it is important not to import into a claim limitations that are not part of the claim..."

Once more, the applicant agrees with the office to the extent that the claims must be interpreted as broadly as their terms reasonably allow. *In re American Academy of Science Tech Center*, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004) (The USPTO uses a different standard for construing claims than that used by district courts; during examination the USPTO must give claims their broadest reasonable interpretation.). However, it is also noted that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

Again, applicant has provided a clear definition of the terms alpha fraction and beta fraction of total naphthenic acids as can be taken from the specification on page 7, lines 3-27. Therefore, the office improperly interpreted the claim terms in a manner inconsistent with the express definition in the specification.

(2) Moreover, should the office rely on the theory of inherency to establish that Petersen teaches the compositions as presently claimed, the office is invited to produce a basis in

fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristics necessarily flow from the teachings of the applied prior art.

(3) Notwithstanding the above defects in the examiner's arguments, the office is reminded that anticipation under 35 U.S.C. § 102 requires the presence in a single prior art disclosure of each and every element of a claimed invention. *Carella v. Starlight Archery*, 804 F.2d 135, 138, 231 U.S.P.Q. (BNA) 644, 646 (Fed. Cir.), *modified on reh'd*, 1 U.S.P.Q.2D (BNA) 1209 (Fed. Cir. 1986), and the presence in a single prior art disclosure of all elements of a claimed invention arranged as in that claim. *Panduit Corp. v. Dennison Manufacturing Co.*, 774 F.2d 1082, 1101, 227 U.S.P.Q. (BNA) 337, 350 (Fed. Cir. 1985).

With respect to claims 18-19, the office failed to identify a step of determining a beta naphthenic acid content of a feed in the cited reference (claim 18), and failed to identify oils and crudes (claim 19).

With respect to claims 20-21, the office failed to identify in Petersen determining content of a beta fraction of total naphthenic acids in a second refinery feedstock in the cited reference, as well as any teaching in Petersen that the amount of the second refinery feedstock in the combined refinery feedstock is a function of the beta fraction of total naphthenic acids in the second refinery feedstock such that the combined naphthenic corrosivity is less than the naphthenic corrosivity of the first refinery feedstock (claim 20). Similarly, the office failed to identify determining naphthenic acid corrosivity of the first refinery feedstock comprises determination of an alpha fraction of naphthenic acids (claim 21).

With respect to claims 26-27, the office failed to identify a step of increasing the total acid number using a beta fraction of naphthenic acids in an amount effective to reduce naphthenic acid corrosivity of the feedstock (claim 26), and further failed to identify a step of combining a hydrocarbon composition enriched in the beta fraction of naphthenic acids with the feedstock (claim 27). Once more, Petersen dilutes high-TAN feedstock with a low-TAN feedstock and thus decreases the TAN number in the mixture.

With respect to claim 29, the office entirely failed to provide any reasoning as to why that claim would be anticipated.

With respect to claims 32-33, the office failed to identify a step of determining a quantity of a beta fraction of total naphthenic acids in a refinery feedstock and a step of correlating the quantity of the beta fraction with reduced naphthenic acid corrosivity of the refinery feedstock (claim 32), and further failed to identify a step of providing information of the quantity of the alpha fraction of total naphthenic acids (claim 33).

For at least these reasons, the rejection of claims 18-21, 26-27, 29, and 32-33 as being anticipated by Petersen should be overcome.

### **35 USC §103**

The Office rejected **claims 22, 28, and 31** as being obvious over Petersen. Once more, the applicant respectfully disagrees for various reasons.

With respect to claim 22, it is noted that not all of the claimed elements are present in Petersen as pointed out above for the parent claim 20. Moreover, the examiner noted that it would have been obvious to acquire a feedstock with a certain naphthenic acid corrosivity from Athabasca, since this would be a well known source of oil sand. While the applicant agrees that Athabasca is a well known source of oil sand, it is pointed out that Athabasca oil sands are also well known as having a high content of naphthenic acids. Thus, the knowledge of the person of ordinary skill in the art would dictate NOT to use Athabasca oil sands to reduce combined naphthenic corrosivity.

Regarding claim 28 it is noted that not all of the claimed elements are present in Petersen as pointed out above for the parent claim 26. Moreover, the examiner noted that more corrosive crude oils would have higher acid numbers, and that blending would result in a stream with higher TAN number. Thus, according to the office's reasoning, corrosivity would increase, which is contrary to the claimed subject matter.

With respect to claim 31, it is noted that not all of the claimed elements are present in Petersen as pointed out above for the parent claim 29. Moreover, the examiner noted that the person of ordinary skill in the art would readily recognize that opportunity crudes would be a suitable source to apply to the Petersen process. It is entirely unclear how this would benefit the

process in the '013 patent. Opportunity crudes are characterized by their high TAN number, which is thus exactly contrary to the proposed use in Petersen.

For at least these reasons, the rejection of claims 22, 28, and 31 as being obvious over Petersen should be overcome.

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The Office rejected **claims 23-25** as being obvious over Kaufman (U.S. Pat. No. 1,986,775) in view of Petersen. The applicant respectfully disagrees for various reasons.

Claim 23 (and dependent claims 24-25) expressly require a step of "... combining at least a portion of the fraction comprising the beta fraction with the refinery feedstock in an amount effective to reduce naphthenic acid corrosivity..." Such is not the case in either Kaufman and Petersen. Indeed, it should be noted that both references expressly associate naphthenic acids with corrosivity and fail to make any distinction between a corrosive alpha fraction and a corrosion inhibiting beta fraction.

Moreover, the examiner seemed to argue that it would have been obvious to blend the naphthenic acids free lubricating oil of Kaufman with the original crude of Petersen. While such combination would indeed read on Petersen, it is noted that it is NOT the naphthenic acids free fraction that the claims require but the naphthenic acids (beta fraction) containing fraction. Clearly, Petersen not only fails to motivate such combination, but also teaches against such combination.

For at least these reasons, the rejection of claims 23-25 as being obvious over Kaufman in view of Petersen should be overcome.

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The Office rejected **claim 30** as being obvious over Petersen in view of Blum (U.S. Pat. No. 5,820,750). The applicant once more respectfully disagrees for various reasons.

First, it is noted that claim 30 is dependent on claim 29 and as such lacks all of the elements in Petersen as pointed out above. A combination with Blum fails to remedy these

defects. Indeed, Blum teaches that hydroprocessing removes total naphthenic acids as evidenced by the reduction in TAN number. Clearly, Blum fails to recognize or suggest a difference in naphthenic acids with respect to alpha and beta fraction as presently claimed. Therefore, the step of determining a ratio of beta naphthenic acids to alpha naphthenic acids in the feed can not be present in Blum. Still further, Blum fails to provide any motivation for combination of the hydrothermally processed materials as his process already solves the problem of high TAN numbers.

For at least these reasons, the rejection of claim 30 as being obvious over Petersen in view Blum of should be overcome.

**Request For Allowance**

Claims 1 and 3-34 are pending in this application, with claims 10-17 and 34 being withdrawn. The applicant requests allowance of all pending claims.

Respectfully submitted,  
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